SKILL ACQUISITION

PAST PAPER QUESTIONS

2.1.2 Skill Acquisition

Skill, skill continuums and transfer of skills

Characteristics of skill.

1. Describe the characteristics of skilled performance. [3 marks]

Three marks for 3 of:

A. *Minimisation of time/quick/fast/ efficient*
B. *Minimisation of energy*
C. *Repeatable success / consistent / few mistakes*
D. *Flowing / smooth / good technique / aesthetically pleasing*
E. *Adaptable*
F. *Environmental goal / goal directed*

2. Skilful performances are usually:

- goal directed
- follows technical model
- aesthetically pleasing

Describe practical examples of the performance of movement skills to show what is meant by each of these characteristics. [3 marks]

Three marks for 3 of:

A. *(Goal directed) e.g. the tennis player pre-plans / intends her serve to get close to the edge of the service box with spin / known result*
B. *(Follows technical model) e.g. the batsman in cricket uses a learned / repeated forward defensive shot to hit the ball*
C. *(Aesthetically pleasing) e.g. the gymnast shows fluid dance moves to link her moves together so that they look good / equiv*

3. State the characteristics of skilful performance. [3 marks]

A. *Three marks for 3 of:*
B. *Learned*
C. *Efficient / minimisation of time / energy / effortless*
D. *Goal-directed / pre-determined result*
E. *Follows technical model / accurate*
F. *Fluent / smooth / error free / consistent*
G. *Aesthetically pleasing*

4. Skilled movements are learned and efficient; they do not waste energy. Identify three other characteristics of skill. [3 marks]

Three marks for 3 of:

A. *Goal directed*
B. *Follows technical model*
C. *Fluent*
D. *Aesthetically pleasing*

5. Skilful performances:

- are learned
- are goal directed
- follow technical models
- are aesthetically pleasing

Using practical examples, describe what is meant by each of these characteristics. [4 marks]

4 marks for four of:

A. *Learned - e.g. skill (kicking/passing/throwing) develops /improves from basic pass to more complex spin*
B. *Goal directed – e.g. the tennis player pre-plans/intends her serve to get close to the edge of the service box with spin/known result*
C. *Follows technical model – e.g. the batsman in cricket uses a stylised / recognisable action in a forward defensive shot to hit the ball*
D. *Aesthetically pleasing - e.g. the gymnast shows fluid dance moves to link her moves together so that they look good/equiv*

Use of skill continua - Impact of skill classification on structure of practice for learning

6. Explain, using examples of motor skills, the terms: gross, fine, open, closed, high organisation and low organisation skills. [6 marks]

Six marks for 6 of:

A. *Gross - large muscle movements / dynamic / ballistic movements, e.g. a long jump*
B. *Fine - small muscle movements / intricate movements, e.g. badminton flick serve*
C. *Open - affected by environment e.g. receiving a serve in tennis*
D. *Closed - not affected by the environment / habitual, e.g. a rugby penalty*
E. *High organisation – cannot be split into parts / sub-routines easily, e.g. cycling leg action*
F. *Low organisation - easily split into sub-routines / made up of separate discrete elements, e.g. a triple jump*

7. Identify three characteristics of an open skill. [3 marks]

Three marks for 3 of:

A. *Affected by environment / always changing*
B. *Predominantly perceptual / need to interpret and judge stimuli*
C. *Usually complex / need to process a lot of information / stimuli*
D. *Usually externally paced / speed controlled by others*
E. *Outcome varies / not performed the same way every time*

8. Explain, using practical examples, what is meant by externally and internally paced skills. [4 marks]

Four marks for:
Externally paced

A. *Speed / start of the skill is controlled by the environment / others*
B. *Suitable practical example e.g. receiving a pass in football*

Internally paced

C. *Speed / start of the skill is controlled by the performer / dispositional control*
D. *Suitable practical example e.g. passing the ball in netball*

9. Explain using a suitable practical example for each, the terms simple skill and complex skill. [4 marks]

Four marks for:
Credit suitable practical examples
Simple Skill

A. *One or few stimuli to process / limited information to process / one or few decisions to make / skill with few subroutines / limited cognitive demand / limited perceptual requirements / less feedback / limited decision making / one movement*
B. *E.g. Running / sprinting / sprint start / throwing / kicking / jumping*

Complex Skill

C. *Many stimuli to process / lots of information to process / many decisions to make / increased perceptual requirements / more feedback / skill with more or many subroutines / several movements*
D. *E.g. Batting or bowling in cricket / basketball dribble / tennis serve / hitting a ball / gymnastics routine / somersault / high jump / triple jump / golf swing / receiving a ball in a game / delivering a pass in a game*

10. Motor skills can be classified as discrete, serial or continuous. Describe, using a practical example for each, these classifications. [3 marks]

Three marks for:
Each description should have a practical example to score the mark
Discrete

A. *The skill has a clear beginning and end / there are specific sub-routines to the skill – e.g. a penalty kick in football*
Serial
B. *The skill is made up of two or more discrete elements / the sub routines are readily separated / there are separate skills involved in the whole movement / each <u>element</u> has a clear beginning and end – e.g.a triple jump*
Continuous
C. *The skill is flowing / fluent / the end of one sub routine becomes the beginning of the next / the skill cannot easily be split up into sub-routines / there is no clear beginning and end – e.g. cycling*

11. One way of classifying movement skills uses the open-closed continuum. Describe three characteristics of a closed skill. [3 marks]

Three marks for 3 of:

A. *Is not affected by environment / same or similar patterns of movement required*
B. *Is predominantly habitual / can be autonomous / is repeatable*
C. *Is usually simple / no need to process a lot of information or stimuli / few decisions*
D. *Usually internally-/self-paced / speed controlled by the performer*

<u>Justification of skill placement on each of the continua.</u>

12. Skills such as javelin throwing may be classified on continua as open or closed, self-paced or externally-paced, gross or fine and discrete or continuous.
Classify the javelin throw according to the above four continua and justify your selection for the open-closed and the discrete-continuous continua. [4 marks]

Three marks for 3 of:

A. *Closed Self-paced Gross Discrete*
(2 marks for all 4 correct; 1 mark for any 3)

B. Closed – unchanging/predicable environment/few decisions
C. Discrete – definite beginning and end

13. A profile can be used to represent certain characteristics of skilled movement, as shown below:

Continuous ……..	Discrete
Gross ……	Fine
Self-paced ……..	Externally-paced
Closed ……..	Open

Identify where the shot putt should be placed on each continuum. [2 marks]

(1 mark for three correct responses, 2 marks for 4 correct responses)
A. Continuous……..…Discrete
B. Gross…._……....Fine
C. Self.. _……External
D. Closed.. _……..……Open

14. Front crawl is a style of swimming and may be classified on continua as open or closed, self-paced or externally-paced, gross or fine and discrete or continuous. Classify the front crawl according to the four continua, justifying your selection on the self-paced / externally-paced and discrete / continuous continua. [4 marks]

Four marks for:
A. Closed, self paced or externally paced, gross and continuous.
(1 mark for any 3, 2 marks for 4)

B. Self paced - performer dictates the rate at which they swim at
C. Externally paced - swimmer competing in a race / or against a set rate in training (sub max 1 mark)
D. Continuous - the end of one movement is the beginning of the next / ongoing.

15. Performers in the women's heptathlon compete in the 100m sprint, high jump, long jump, shot put, javelin, 800m and 100m hurdles. Name, giving a reason for your choice, one heptathlon event that is an

- open;
- continuous;
- serial;
- self-paced skill. [4 marks]

Four marks for:
A. Open - 800m - Environment may change – pace / tactics / decisions made
B. Continuous - 800m/100m hurdles/100m - Repeated actions / no distinct beginning and end to skill
C. Serial - 100m/high jump/long jump/shot put/javelin/100m hurdles - Consists of / able to be broken down / practised into (discrete) parts/e.g.s
D. Self-paced - High jump/long jump/shot put/javelin - Started when performer ready/pace of movement controlled by performer.
N.B Permit other events if correctly justified

16. The diagram shows a suggested skills profile of a hockey dribble within a game.

Continuous	.....*.....	Discrete
Gross	...*.....	Fine
Self Paced	.....*.....	Externally Paced
Closed	.....*.....	Open
Intrinsic Feedback	.....*.....	Extrinsic Feedback
Simple	.....*.....	Complex

Justify the selection of each aspect of the profile. [6 marks]

Six marks for:

A. *Continuous – the skill is repeated over and over again*
B. *Gross – involves large muscles i.e. the legs*
C. *Self paced – the performer decides when to begin the skill <u>or</u> Externally paced – opposition decides by positioning (when) / force the beginning of the skill*
D. *Open – Decisions about when and how to dribble as the environment is changing/opponents*
E. *Intrinsic / how it feels / kinaesthetic <u>or</u> Extrinsic from a coach / Knowledge of results / knowledge of performance / equiv*
F. *Complexity - hockey player has to process lots of information from the environment*

17. Classify the long jump according to the following four continua and justify each of your choices.

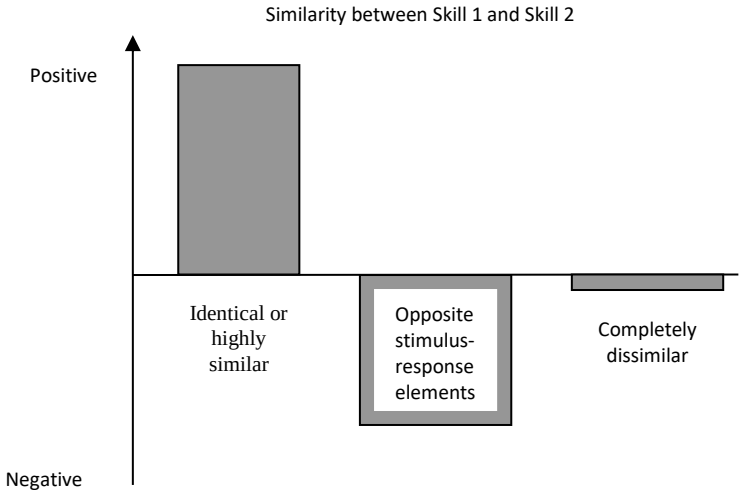
- open to closed
- self-paced or externally paced
- discrete to continuous
- gross to fine [4 marks]

Four marks for:

A. *Closed – performed in a stable environment / pre-planned pattern of movements / habitual / on a long jump pit*
B. *Self-paced-performer decides when to start / and or jump*
C. *Discrete – well defined beginning and end / serial series of discrete tasks / actions*
D. *Gross – involves <u>large muscle</u> groups*

<u>Transfer of learning - Understanding of how transfer of learning impacts on skill development</u>

18. When learning a new skill, transfer may occur. The graph shows the extent of transfer in different situations, A, B and C.



Explain the meaning of the terms positive and negative transfer in the context of learning a new sports skill. [2 marks]

Two marks for:

A. *Positive transfer – enhancement of performance of skill being learned as a result of previous learning of another skill*
B. *Negative learning - impairment of performance of skill being learned as a result of previous learning of another skill*

19. Suggest an example of a skill, for each of the situations A, B and C in the graph, which illustrates the type of transfer shown. Give reasons for your answers. [6 marks]

Six marks for:

A. *A – positive transfer – likely when skills have highly similar actions depending upon similar motor abilities/same muscles / movements*
B. *E.g. tennis serve and volleyball serve*
C. *B – negative transfer – likely when two skills are similar but not identical actions using similar abilities in slightly different ways, such that they interfere with each other*
D. *E.g. playing strokes in badminton and tennis have similar actions but subtle differences (wrist action)*
E. *C – zero transfer – likely when two skills have dissimilar movement patterns using differing abilities and the two skills do not interact*
F. *E.g. any example of two completely different skills*

20. A squash player spends several weeks during the summer playing tennis in the hope that it will improve her squash skills. When she returns to squash, she finds that some of her skill levels have deteriorated. Her coach suggests that transfer of learning may be the cause of her problem.
Explain, using examples from the situation described above, what is meant by the terms positive, negative and bilateral transfer. [6 marks]

Six marks for:

A. *Positive transfer – enhancement (equiv) of performance of skill being learned as a result of previous learning; (NB. accept agility)*
B. *E.g. – backhand dropshot being essentially same action in both activities*
C. *Negative transfer – impairment (equiv) of performance of skill being learned as a result of previous learning*
D. *E.g. – use of fixed wrist in tennis having negative effect on squash stroke that requires flexible wrist*
E. *Bilateral transfer - limb to limb transfer*
F. *E.g.: developing weaker side strokes based on stronger side learned skills*

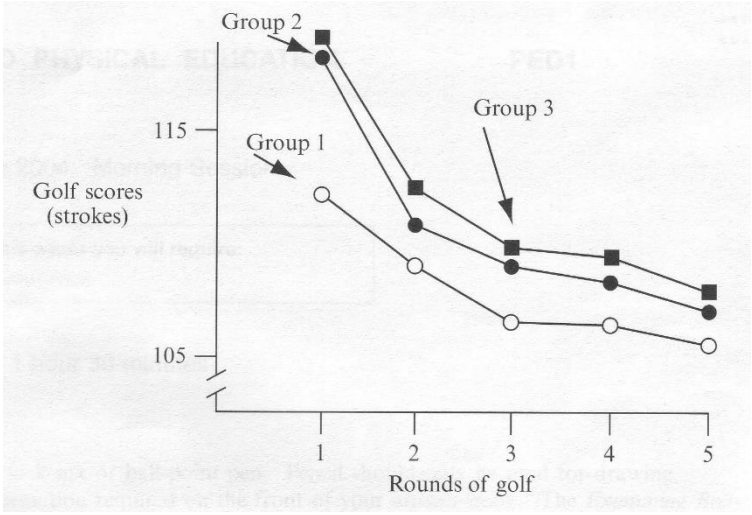
21. Suggest how a coach could ensure that positive transfer was likely to occur during the learning of a sports skill. [3 marks]

Three marks for 3 of:

A. *Practice / experience of original task*
B. *Realistic practice situations*
C. *Similar stimulus*
D. *Similar response*
E. *Similar movement patterns*
F. *Avoid situations where new task requires reacting to old stimulus*

G. Coach making performer aware of transfer potential

22. In golf, the player with the lowest score wins. The following graph shows the golf scores achieved by three groups of students.
    - Group 1 – practised at a golf driving range
    - Group 2 – did not receive any practice
    - Group 3 – practised on a miniature golf course



The graph shows that Group 1 had experienced positive transfer of learning. State what you understand by the term transfer of learning. Explain the other forms that transfer can take. [4 marks]

Four marks for 4 of:

A. Skills learnt in one activity affect another
B. Positive – enhances learning of new skill
C. Negative – hinders learning of new skill
D. Bilateral – skill transferred from one side to another
E. Zero – no transfer

23. Explain, using the graph, the effects of transfer on Groups 2 and 3. [2 marks]

Two marks For:

A. Group 3 - negative transfer
B. Group 2 – any practice better than none

24. Suggest how could a coach ensure that positive transfer of learning will take place in future sessions. [3 marks]

Three marks for 3 of:

A. Use golf driving range/practice
B. Make tasks similar
C. Original skill well-learnt
D. Performer motivated
E. Performer understands technique
F. Planned progression
G. *Performer understands process of transfer*

25. The action of throwing can be transferred from one sport to another. Describe what is meant by the term transfer of learning and explain the other forms that transfer can take. [5 marks]

Five marks for 5 of:

A. *Skills learnt in one activity affects / influence / impact another (sub max 4)*
B. *Positive- enhances / helps / aids the learning of a new skill / e.g.s*
C. *Ensure original task is well learnt / practice*
D. *Planned progression*
E. *Make practice sessions realistic / relevant to the competitive environment*
F. *E.g. practicing against opposition / time / equiv*
G. *Eliminate bad habits*
H. *Performer is well motivated / confidence*

26. Suggest factors that may lead to successful transfer of learning taking place? [4 marks]

Four marks for 4 of:

A. *Coach makes performer aware of transfer potential/highlight elements of skill that are similar*
B. *Identify elements that may hinder learning*
C. *Ensure original task is well learnt / practice*
D. *Planned progression*
E. *Make practice sessions realistic / relevant to the competitive environment*
F. *E.g. practicing against opposition / time / equiv*
G. *Eliminate bad habits*
H. *Performer is well motivated / confidence.*

27. Because of the dangerous nature of the implement, a novice shot putter has to practise using a soft ball. Explain how practising in this way could still improve performance. [3 marks]

Three marks for 3 of:

A. *Positive transfer;*
B. *Using two skills that are very similar in technique / complement each other ie. putting using a medicine ball;*
C. *Two skills with similar psycho-motor abilities;*
D. *Improves schema / motor programme / kinaesthetic awareness;*
E. *Able to practice more due to reduced fatigue.*

Impact of skill classification on structure of practice for learning

<u>Methods of presenting practice</u>

28. Explain how the nature of the task and the characteristics of the learner might lead you to decide whether to use whole or the part method of learning a skill. [4 marks]

Four marks for 4 of:
Task - sub max 2 marks

A. *Is the skill continuous/discrete – discrete better for part/continuous for whole*
B. *Is skill coherent/flowing – whole for coherent/parts for divisible 'bits'*
C. *Is skill simple/complex – whole for simple skills*
Learner:
D. *Is learner novice/skilled – skilled better able to use whole;*
E. *Learners characteristics – motivation*

29. Suggest which method, whole or part learning, would be most appropriate to use when coaching an activity such as shot putt to beginners. Give reasons for your answers. [3 marks]

Three marks for 3 of:
Whole learning - sub max 2 marks

A. *Effective use of time*
B. *Motor programme developed through trial and error*
C. *Appreciate end product*
D. *Kinesthetic sense*
E. *Transfer from practice is positive*

Part learning - sub max 2 marks

F. *Break down components*
G. *Confidence and understanding to develop*
H. *Useful with dangerous implements*
I. *Provides stages of success*
J. *Focus on a particular aspect*

30. Describe the advantages of using the whole method to teach swimming. [3 marks]

Three marks for 3 of:

A. *Develops (kinesthesis) feel of the movement*
B. *Builds up a mental image*
C. *Link together the spatial and temporal elements of the skill / correct order of sequence*
D. *More meaningful from the start*
E. *Give learner an aim*

31. Describe the advantages of using the part method to teach swimming. [4 marks]

four marks for 4 of:

A. *Reduced demands for complex skills / less information to process*
B. *Allows confidence and understanding to grow quickly*
C. *Helps with motivation*
D. *Useful in dangerous situations – swimming*
E. *Can reduce fatigue in physically demanding skills*
F. *Allows the opportunity to focus on particular elements/work on one part at a time*
G. *Provides stages of success*
H. *Low organisation skills can be broken down easily*

32. The service action of tennis can be taught using either the whole or the part method of learning. Identify three advantages and three disadvantages of using the part method of learning to teach a tennis serve. [6 marks]

Advantages: Three marks for 3 of:

A. *Can focus on particular aspects / perfect / master certain sub routines*
B. *Reduces demand on learner learning complex skill / easier to learn / avoid overload of information*
C. *Allows confidence / understanding to grow quickly*
D. *Increases motivation*
E. *Can reduce the effects of physical fatigue / doesn't require good fitness*

Disadvantages: Three marks for 3 of:

F. *Difficult to appreciate end product / don't get to see the whole skill*

G. *Loss of continuity / feel of flow*
H. *Highly organised skills / fast ballistic skills difficult to break down*
I. *Transfer from part to whole may be ineffective / hard to link to whole movement*
J. *Loss of kinaesthetic sense / lack of feel for whole movement*
K. *Can be time consuming / tedious / not progressing*
L. *Can increase the effects of physical fatigue*

33. Suggest factors that a coach should consider when deciding to use whole or part methods of practice [3 marks]

Three marks for 3 of:
A. *Age of learner / maturation*
B. *Motivation of learner / attention / behaviour*
C. *Fitness of learner / physical demands of activity*
D. *Type of skill*
E. *Complexity of skill / cognitive involvement*
F. *Organisation of the skill / coherence*
G. *Open / closed skill*
H. *Level of experience / stage of learning / ability / skill level*
I. *Time constraints*

34. Suggest why the part method of practice may be more effective with some performers. [3 marks]

Three marks for 3 of:
A. *Performer attempts the skill in stages/broken down*
B. *Novice students may achieve success / good for beginners*
C. *Performers with limited attention span can remain on task / maintains motivation*
D. *Specific aspects of the technique can be focussed on*
E. *Develops confidence*
F. *The physical demand of the skill is reduced / less demanding*

<u>Types of practice</u>

35. Distinguish between massed practice and distributed practice. [2 marks]

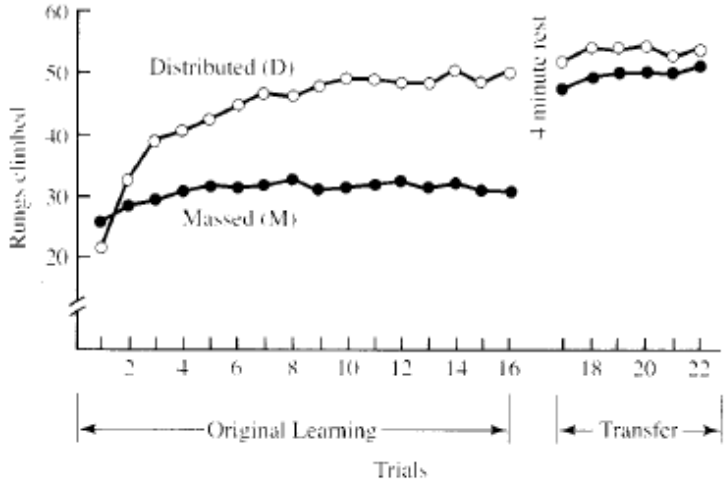
Two marks for:
A. *Massed – involves the repeated practice with little or no rest*
B. *Distributed practice involves the repeated practice of skills with a recovery / rest period before the repetition of the skill.*

36. Suggest two aspects of the task and two characteristics of the learner that might help you decide whether to use massed or distributed practice to improve learning. [4 marks]

Four marks for 4 of:
Individual/learner – Massed or Distributed for
A. *Experienced / novice*
B. *Fitter / limited fitness*
C. *Highly motivated / less motivated*

Task – Massed or Distributed for
D. *Discrete / continuous / gross skills*
E. *Brief / ballistic/ strenuous / complex*
F. *Simple / dangerous*

37. The graph shows the performance on a ladder task (rungs climbed) performed under massed and distributed conditions.



Describe and explain the results of both the massed and distributed practice groups before the 4 minute rest period. [3 marks]

Three marks for 3 of:

A. *Massed – group shows little improvement*
B. *Both groups reach a plateau/accept description*
C. *Distributed group show more improvement/climbed more rungs than massed*
D. *Distributed learned quicker*
E. *Distributed group had subjects with better ability/fitter/more motivated/less fatigued*

38. Suggest reasons why, after the 4 minute rest period, the number of rungs climbed are similar for both groups. [2 marks]

Two marks for 2 of:

A. *Learning has taken place*
B. *Massed practice has not affected learning*
C. *Fatigue has not affected learning*
D. *Massed practice affects performance at the time of performing*

39. State two characteristics of the task and two characteristics of the learner that might lead a coach to use massed practice to improve learning. [4 marks]

Four marks for 4 of:
Sub max 2 marks:
Task

A. *Discrete / has few elements*
B. *Fine skill*
C. *Brief / not physically demanding / fatiguing / ballistic*
D. *Simple/repetitive / requires little concentration*

Sub max 2 marks:
Learner

E. *Experienced / mature / older / can concentrate / focus*
F. *Fitter*
G. *Highly motivated*

40. Suggest how could a coach use the rest periods involved in distributed practice. [3 marks]

3 marks for 3 of:

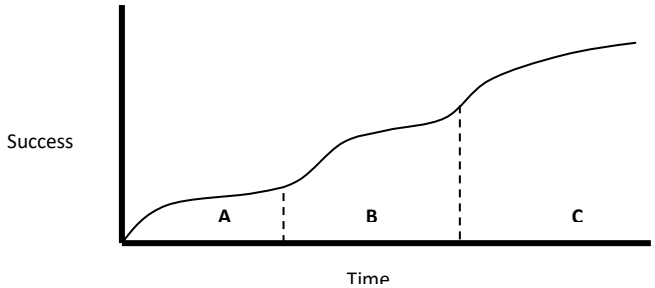
A. *Reduce fatigue / recover*
B. *Reduce short-term inhibition*
C. *Provide feedback / knowledge of results / performance*
D. *Alternative activity / novelty game*
E. *Develop positive transfer*
F. *To motivate the performer*
G. *Mental practice / rehearsal*

Understanding how knowledge of skill classification informs practice structure (presentation and type) to allow learning / development of skills

Principles and theories of learning and performance

Stages of learning and how feedback differs between the different stages of learning.

41. The diagram shows the improvement in learning and performance of a performer over a period of time. Name the phase A, B and C shown on the graph and identify two characteristics of a performer in phase C. [3 marks]



Three marks for 3 of:

A. *Cognitive/associative/autonomous (1 mark for all three in correct order)*
Any 2 for 2 marks
B. *Skill has become almost automatic / skill is performed easily / without stress /*
C. *effectively / subconsciously / habitual*
D. *Performance is consistent and highly skilled*
E. *The performer can process information / make decisions easily*
F. *The performer can concentrate on relevant cues and signals from the environment*
G. *The performer can concentrate on extra / high level strategies / tactics*
H. *The performer can detect and correct errors without help / kinaesthetic*

42. State the three stages of learning and describe how the method of guidance might change as a performer moves from one stage of learning to the next. [3 marks]

Three marks for:
Sub max 1 mark

A. *Cognitive/Associative/Autonomous*
B. *Cognitive stage – Mechanical/Visual*
C. *Associative/Autonomous – Verbal*

43. Describe how feedback should change as a performer moves from the early stage of learning through to the final stage of learning. [4 marks]

Four marks for 4 of:

A. *Cognitive Stage of learning*
   Sub max 3 marks
B. *Mainly extrinsic / from coach*
C. *Knowledge of Results (KR)*
D. *General / simple / basic*
E. *Immediate / after performance / terminal*
F. *Receive intrinsic feedback / kinesthetic but cannot use it*

   Autonomous stage of learning
   sub max 3 marks
G. *Mainly intrinsic / correct own mistakes*
H. *Knowledge of performance (KP)*
I. *Specific / detailed / critical*
J. *Can be delayed / during performance / concurrent.*

44. Describe the characteristics of a performance at the associative stage of learning. [4 marks]

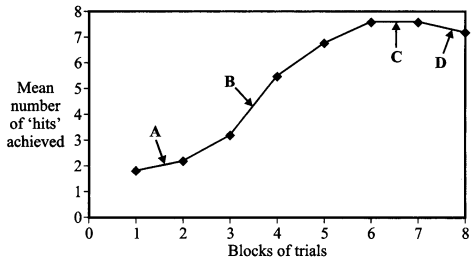
4 marks for 4 of:
A. *Motor programme develops / rapid improvement in performance*
B. *Fundamental skills start to become more consistent / smooth / coordinated / accurate / efficient*
C. *Anticipation used / develops / use more complex / detailed cues*
D. *Fewer repeated errors / more successful*
E. *Skills transferred to different situations*
F. *Practice phase / longer than first / cognitive / beginner phase*
G. *Basic trial and error learning*
H. *Starting to use basic intrinsic / kinaesthetic / proprioceptive feedback / compares to mental image / pays attention to concurrent feedback*

45. Suggest strategies a coach could use to help the performer progress from the associative to the autonomous stage. [4 marks]

4 marks for 4 of:
A. *Coach gets performer to focus on kinesthesis / KP*
B. *Coach encourages performer to self evaluate performance / error detection*
C. *Coach may focus on stress management / mental practice / psychological aspects*
D. *Coach may be more motivational / pep talks / verbal persuasion*
E. *Coach to concentrate on style and form*
F. *Set more challenging targets*
G. *Frequent / varied practice*
H. *Feedback is critical / technical / concurrent / negative*
I. *Video analysis*
J. *Improve and maintain fitness*

<u>Learning plateau.</u>

46. Improvements in performance may be demonstrated through repeated attempts at a skill over a period of time. The image shows a typical performance curve.



Describe the main features of performance occurring at stages A-D. [4 marks]

Four marks for:
A – slow early progression – many mistakes
B – rapid improvements / fewer mistakes
C – (plateau) No improvements in performance
D – Performance deteriorates

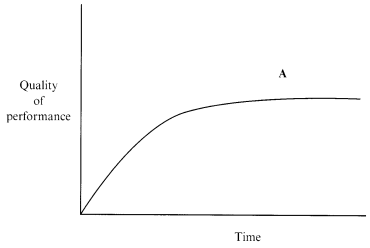
Suggest three possible causes of stage C. [3 marks]

Three marks for:
A. *Fatigue / tiredness*
B. *Boredom / lack of motivation;*
C. *Faulty techniques / lack of understanding;*

Suggest, using examples, three possible solutions to the problems that you previously identified. [3 marks]

Three marks for:
A. *Slow rate of teaching / rest periods / practise something else / provide support*
B. *Make practices more interesting / enthusiasm / encouragement / reinforce*
C. *Provide appropriate feedback / selective attention / emphasise cues*
D. *(credit suitable e.g.'s)*

47. The graph shows a performance curve of a beginner learning to shoot basketballs in a massed practice session.



Identify, using the graph, phase A of the curve and suggest reasons for its occurrence [5 marks]

One mark for:
A. *Plateau*
<u>Reasons</u> (sub max 4 marks<u>)</u>:
A. *Learner needs time to assimilate before moving onto the next stage;*
B. *Targets are set too low (or high)*
C. *Fatigue/lack of fitness;*
D. *Lack of variety of practice methods;*
E. *Lack of motivation/interest/boredom;*
F. *Physical fitness is lacking for next level;*

G. *Low level of aspiration;*
H. *Lack of ability to adapt skills/lack of feedback;*
I. *Limited coaching/poor coaching;*
J. *Reached maximum/perfect;*
K. *Bad/limited technique.*

48. Describe four ways that a coach could overcome the problems created by phase A. [4 marks]

Four marks for 4 of:
A. *Break-up the practice session into shorter / distributed sessions / rest periods / equiv*
B. *Re-setting of goals/task more challenging;*
C. *Offering extrinsic rewards/encouragement/praise/positive reinforcement/equiv.;*
D. *Using mental rehearsal in practice session;*
E. *Feedback to performer;*
F. *Competition against realistic opposition/match situation;*
G. *Use of whole-part-whole/part method/breaking the skill down;*
H. *Ensure performer focuses on appropriate cues;*
I. *Enjoyment;*
J. *Changing role/responsibility/position;*
K. *Make performer fitter;*
L. *Make practices more interesting/variation;*
M. *Discuss the lack of progress/explaining the plateau effect;*
N. *Better quality coaching/new coach.*

49. Explain what factors may cause this plateau to occur in the learning of a skill. [4 marks]

Four marks for 4 of:
A. *Learner needs time to assimilate before moving onto the next stage*
B. *Targets are set too low (or high)*
C. *Fatigue*
D. *Lack of variety of practice methods*
E. *Lack of motivation / interest / boredom*
F. *Physical fitness is lacking for next level*
G. *Low level of aspiration / lack of confidence / lack of self esteem*
H. *Lack of ability to adapt skills / lack of feedback / lack of understanding*
I. *Limited coaching / poor coaching*
J. *Reached maximum / perfect*
K. *Bad / limited technique. 4 marks*

<u>Cognitive theories.</u>

50. Explain how insight learning could have a positive effect on performance. [4 marks]

Four marks for 4 of:
A. *Insight learning – understanding the process to achieve the result*
B. *Involves cognitive processes/development*
C. *Experiences the 'whole' activity rather than skills in isolation*
D. *Helps to identify role in the game*
E. *Allows learners to develop their own strategies and/or routes of understanding/learn own corrections*
F. *Poses questions but not 'trial and error' learning*
G. *Better for the performer rather than being told what to do all the time*
H. *Performer able to adjust movements as required*

51. Suggest reasons why a coach may decide to use insight learning when teaching a skill, rather than operant conditioning. [4 marks]

Four marks for 4 of:

A. (Insight learning)–developing an understanding of the whole problem
B. Develops more independent learners/ students think more / cognitive processes
C. Develops greater understanding of relationship between sub-routines / timing
D. Able to modify / adapt actions or skill in a new situation
E. Increased motivation of students
F. Encourages creativity / decision making

Behaviourism

52. Suggest why coaches usually prefer to use reinforcement rather than punishment when teaching skills [5 marks]

Five marks for 5 of:

A. Reinforcement - gives satisfaction to the learner;
B. This leads to increased motivation;
C. Leading to repeat / correct performance;
D. Punishment - is an unpleasant experience/equiv;
E. This leads to dislike of coach / activity/ demotivation / lack of confidence;
F. Reinforcement strengthens the SR bond/punishment weakens it.

53. Briefly explain the terms positive reinforcement, negative reinforcement and punishment, using examples from a team game such as basketball or netball. [6 marks]

Six marks for:

A. Positive - when a stimulus increases the probability of a desired response;
B. e.g. – success at a skill / praise from coach / etc
C. Negative - when the stimulus is withdrawn when the desired response occurs
D. e.g. – removal of noise from crowd at increasing success of visiting player
E. Punishment – giving a stimulus to prevent a response occurring
F. e.g. – being shouted at by coach/rest of team

54. Describe operant conditioning theory and give an example of how you would use operant conditioning methods in the coaching of a game such as basketball. [3 marks]

Three marks for 3 of:

A. Trial and error learning
B. Successful response reinforces / associated with stimulus / strengthen S-R bond
C. Shaping / altering environment to progress towards success
D. e.g. - use of rewards / praise to reinforce learning / performance

55. Explain, using examples, how a coach would use operant conditioning. [5 marks]

Five marks for 5 of:

A. Learning based on S-R relationship
B. Trial and error learning
C. Manipulating the environment / shaping to obtain desired response
D. E.g. use of target area / mechanical feeders / equipment / etc
E. Use of reinforcement

F. *Example of reinforcement / praise / self-satisfaction*
G. *To bring about desired response*
H. *Use of punishment to decrease probability of undesired response*
I. *Example of punishment*

56. Explain the term negative reinforcement and punishment giving examples of each from a team game. [4 marks]

Four marks for:
A. *(Negative reinforcement) - when the stimulus is withdrawn when the desired response occurs*
B. *E.g.: removal of criticism from coach when player is successful/equiv*
C. *(Punishment) - giving a stimulus to prevent a response reoccurring/equiv*
D. *Being shouted at/press ups/sin bin/cards/equiv*

57. Explain, using examples, how a coach could use positive reinforcement to improve the performance of their players. [2 marks]

Two marks for 2 of:
A. *Praise from the coach*
B. *Use of rewards/man of the match*
C. *Increases the probability of a desired response / strengthens the S-R bond*
D. *Success at the skill/self satisfaction*

58. Reinforcement is a feature of operant conditioning. Suggest how a coach can make operant conditioning effective. [3 marks]

Three marks for 3 of:
A. *Learning based on strengthening the relationship between stimulus and response / S-R bond*
B. *Trial and error learning*
C. *Consequences of action*
D. *Manipulation of the environment to get the desired action*
E. *Shaping*
F. *Appropriate example- target areas / lower baskets / etc;*

<u>Social learning</u>

59. Children may learn high jumping by watching others perform. What type of learning is this and what are the main characteristics that govern whether learning by this method is successful or not? [4 marks]

Four marks for 4 of:
A. *Social / observational learning*
B. *Model should be a significant other /parent / teacher / coach / role model*
C. *Similar in age / gender / meaningful / relevant*
D. *Learner pays attention*
E. *Rewarded for behaviour / successful / winner / motivated*
F. *Appropriate level / opportunity to practice / motor production*

60. Bandura (1977) identified a model of observational learning. Describe, using appropriate examples, the four stages of this process. [4 marks]

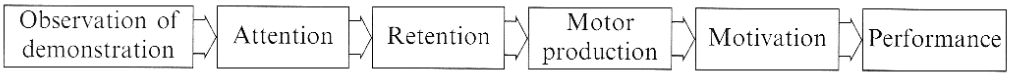
Four marks for:
A. *Attention - highlight the key areas of the skill*

B. *Retention - performer must remember information to reproduce it*
C. *Motor Production - physically capable of performing the skill*
D. *Motivation - use by the coach of rewards / praise*

61. What do you understand by the term learning? [2 marks]

Two marks for 2 of:
A. *Change in behaviour;*
B. *Relatively permanent*
C. *That is reflected in performance/examples;*
D. *Resultant of practice*

62. Bandura's model of observational learning is shown below



Explain, how the terms attention, retention, motor production and motivation help the process of learning. [4 marks]

Four marks for 4 of:
A. *(Attention) - how attractive/successful/powerful or if the behaviour is functional*
B. *(Attention) - demonstration can be seen/is accurate*
C. *(Retention) - can the observer retain the skill in memory / involves cognitive skills*
D. *(Retention) - demonstration is meaningful / relevant / realistic / succinct / clear*
E. *(Motor production) - the abilities / skills to complete the task*
F. *(Motor production) - opportunity to practice / complex skills show progression*
G. *(Motivation) - model needs to be successful/status of model*
H. *(Motivation) - reinforcement / praise / feedback / sense of pride / satisfaction.*

Constructivism

63. Vygotsky suggested that a sports performer could learn new skills by using the method of constructivism. Describe what you understand by the constructivism method of learning in sport. [4 marks]

Four marks for 4 of:
A. *Performer 'builds' learning in stages*
B. *Based on what can I do alone*
C. *What can I do with help*
D. *Using 'More Knowledgeable Other'*
E. *What can I not yet do*
F. *Called 'Zone of Proximal Learning'*

Understanding of how theories of learning impact on skill development.

Use of guidance and feedback
Methods of guidance

64. Describe, using examples, the three main methods of guidance that a coach could use to aid a batsman in cricket. [3 marks]

Three marks for:
A. *Visual - use of video/ demonstration by coach, teacher or other performer*
B. *Verbal - a spoken description of batting technique/teaching/coaching points*

C. *Manual / Mechanical - limbs led through movement by coach/teacher*

65. Identify, using examples, the three main methods of guidance a swimming coach can use to aid a swimmer. [3 marks]

Three marks for:

A. Visual guidance - use of demonstration /charts /videos of the appropriate stroke
B. Verbal guidance - use of key words- eg 'high elbow' / telling them how to improve
C. Manual guidance - use of coach/teacher moving the arms in front crawl / or use of a float

66. Define the term visual guidance and give three examples of how visual guidance may be used for a gymnast. [4 marks]

Four marks for:
submax 1 mark
A. Explanation – improve performance by seeing/watching model/performance
Sub max 3 marks
B. Live demonstration/ expert performance
C. Video of own skilled performance/ slow-motion
D. Video of perfect model
E. Photograph/poster/chart/diagram of skill/ computer simulation
F. Modify display/chalk marks on mats

67. Demonstrations are a form of visual guidance. Identify two other forms of guidance [2 marks]

Two marks for:
A. Manual/physical/mechanical
B. Verbal.

Suggest how a coach could make demonstrations as effective as possible. [4 marks]

A. Four marks for 4 of:
B. Make sure the learner <u>understands</u> the importance and relevance to the final performance/demonstration accurate/meaningful
C. Use of a role model/significant other;
D. Get someone to demonstrate of similar/appropriate to age/ability (self efficacy);
E. Ensure that the audience can see and hear the demonstration well/clear;
F. Show complex skills from different angles and at different speeds/slow motion;
G. Highlight the main aspects/cues of the demonstration/break down skill into components;
H. Focus the attention of <u>beginners/cognitive</u> on a few points rather than the whole performance/simple/specific/short;
I. Minimum delay between instruction and demonstration;
J. Allow time for mental rehearsal;
K. Repeat the demonstration if necessary;
L. Reinforce successful demonstrations.

68. Name and explain, using examples from swimming, three methods of guidance that a coach could use. [3 marks]

Three marks for 3 of:

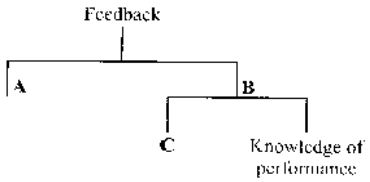
A. *Visual guidance – watching/seeing a demonstration/creating a mental picture - coach show arm/leg action on side of pool/uses student to demonstrate action*
B. *Verbal guidance – coach explains the motor skill to be performed - coach uses key/specific/general teaching points i.e. break the surface with toes/arm brushing ear*
C. *Manual/mechanical guidance – the performer being physically placed/forced/supported - use of floats/hand/or coach moves swimmers limbs/use rope/hand*

69. Identify two potential disadvantages of each of the different forms of guidance. [6 marks]

Six marks for 6 of:
Visual
A. *De-motivation if performer is unable to replicate skill*
B. *Too much information for novice performer*
C. *Poor replication if demonstration is inaccurate*
D. *Static forms soon lose impact*
E. *Unable to see essential detail limits performer*
Verbal
F. *Overload of information*
G. *Difficulty in understanding, particularly novice performers*
H. *Some movements difficult to explain*
I. *Difficult with large groups*
J. *Boring*
K. *Over reliance on feedback*
Manual/mechanical
L. *Performer becoming too reliant on help*
M. *Lack of/limited/distorted intrinsic feedback/kinaesthetic*
N. *Unable to correct independently*
O. *Difficult in large groups*
P. *Limited use in complex/ballistic movements*

<u>Understand the different purposes and types of feedback</u>

70. The image shows the types of feedback that a soccer player might receive.



Identify the types of feedback at A, B and C. [2 marks]

1 mark for 2 correct, 2 marks for 3 correct answers
A = Intrinsic / kinesthetic feedback
B = Extrinsic / augmented feedback
C = Knowledge of results / positive / negative

71. Describe the characteristics of 'effective feedback'? [3 marks]

Three marks for 3 of:
A. *Limited – only process a small amount of information at one time*
B. *Focused on specific points - performer to attend to what is important /appropriate / clear / accurate*
C. *Immediate – as soon as the action is finished, still strong in the memory*

D. *Individualised – to the individual, rather than to the group*
E. *Provided using different methods – such as visual and verbal*
F. *Recognising intrinsic feedback – learning to feel the different movements.*

72. Explain how feedback differs through the associative and autonomous phases of learning. [4 marks]

Four marks for 4 of:
A. *At the associative stage - performer begins to monitor his own feedback*
B. *Still need feedback from coach - more exact than at the cognitive stage*
C. *At the associative stage feedback will be more extrinsic than intrinsic*
D. *At the autonomous stage the performer should be less reliant on knowledge of results*
E. *Be able to detect their own errors and with kinaesthetic feedback*
F. *Be able to make corrections to their own performance*

73. Explain how the type of feedback being used by a performer varies as they become more skilled. [3 marks]

Three marks for 3 of:
A. *More reliance on intrinsic/internal/kinesthetic feedback*
B. *Less on extrinsic/external/augmented feedback/ coach/ KR*
C. *Less reliance on visual feedback*
D. *Feedback can be more detailed/specific than general/technical*
E. *More prepared to accept negative feedback/critical*

74. Knowledge of results and knowledge of performance are two types of feedback. Explain these two types of feedback. [2 marks]

Two marks for:
A. *KR – outcome of action*
B. *KP – information regarding movement pattern/kinesthesis/feel of movement/intrinsic*

75. Identify the three main benefits of feedback to a swimmer. [3 marks]

Three marks for 3 of:
A. *Correction of errors/improve techniques/highlight weaknesses;*
B. *Reinforcement/illustrate success/highlight strengths;*
C. *Motivation/self-confidence;*

76. When a performer moves from the early stage of learning through to the final stage of learning, the type of feedback they use changes. Describe how feedback should differ at these two stages. [4 marks]

Four marks for 4 of:
Cognitive Stage of learning
Sub max 3 marks
A. *(Primarily) extrinsic/external/coach/augmented*
B. *Knowledge of Results (KR)*
C. *General/simple/basic*
D. *Immediate*
E. *Receive intrinsic feedback/kinesthetic but cannot use it*
F. *Terminal.*

Autonomous stage of learning

sub max 3 marks

G. *(Primarily) intrinsic/correct own mistakes*
H. *Knowledge of performance (KP)*
I. *Specific/detailed/critical*
J. *Can be delayed*
K. *Concurrent*

77. Explain the different types of feedback that a performer may experience. [4 marks]

Four marks for 4 of:

A. *Positive is used as a form of reinforcement, encouraging the performer to repeat*
B. *the action;*
C. *Negative is used if the technique was incorrect to discourage a repetition of the*
D. *action;*
E. *Intrinsic received from within/inside the performer via proprioceptors/kinaesthetic*
F. *Extrinsic / augmented received from outside the performer / coach*
G. *Terminal is received immediately after the performance*
H. *Delayed takes placed sometime after the event*
I. *Continuous / concurrent - during the activity via proprioceptors for kinethesis*
J. *Knowledge of Performance information that the performer receives about the quality of their technique or performance*
K. *Knowledge of Results information about the outcome of the action*

78. Describe, using examples from a team game, the function of feedback. [3 marks]

Three marks for 3 of:

A. *How successful the action was*
B. *Allowing modifications to be made*
C. *Motivation / reinforcement*
D. *Can be internal/intrinsic / kinaesthesis / knowledge of performance / suitable example*
E. *Or external/knowledge of results / extrinsic / suitable example / from coach or team mates.*

79. Describe the factors a coach should consider to ensure that feedback is effective for a javelin thrower. [4 marks]

Four marks for 4 of:

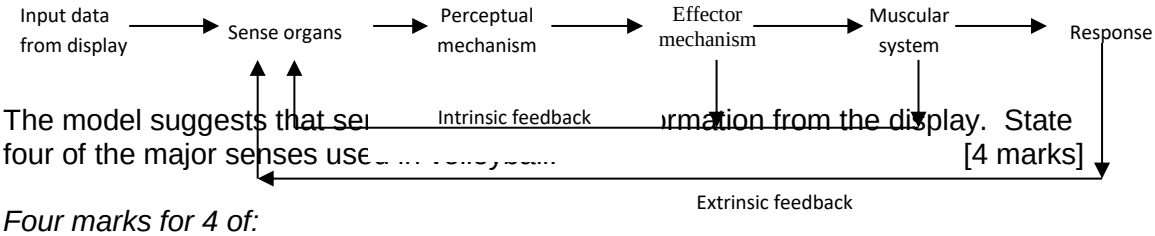
A. *Phase of learning/skill level of the performer / terminal / positive feedback better for beginners / (positive for low self confidence) / concurrent / negative feedback better for advanced / (negative for high self confidence)*
B. *Type / nature of the skill e.g. complexity / organisation / classification*
C. *Relevance of feedback / meaningful / useful / clear / accurate / focused / specific / appropriate to the performer*
D. *Timing of feedback / provide feedback immediately / as soon as possible / terminal*
E. *Quantity of feedback / succinct / short / not too much or too little / ST memory has a limited capacity / can only process limited amount at a time*
F. *Which methods to use/different methods such as visual and verbal*
G. *It must encourage the performer to recognise intrinsic feedback –learning to feel the different movements*
H. *Record the feedback for subsequent reflection*
I. *It must be to the individual rather than to the group*

<u>Understanding of how feedback and guidance impacts on skill development.</u>

General information processing model

Input

80. During a team game, performers will use their senses to detect stimuli. The diagram shows an information processing model.



The model suggests that sel[illegible]rmation from the display. State four of the major senses use[illegible] [4 marks]

Four marks for 4 of:

A. *Touch / feeling / tactile*
B. *Vision / eyes / sight*
C. *Hearing / ears / audition*
D. *Kinesthesis / proprioception / body awareness*
E. *Balance / equilibrium*

81. Briefly explain the three processes that occur as part of the perceptual mechanism. [3 marks]

Three marks for 3 of:

A. *Detection/encoding of stimuli*
B. *Comparison to memory stores*
C. *Recognition of stimuli*
D. *DCR as abbreviations*

82. Explain the term *selective attention* and give examples of its use from a game of your choice. [4 marks]

Four marks for 4 of:

A. *Too much information / stimuli from environment*
B. *Limited processing capacity / single channel hypothesis / bottleneck theory*
C. *Filtering / ignoring / blocking out of unnecessary information*
D. *E.g. crowd / environment / appropriate example*
E. *Focussing / concentrate / picking out on relevant information / stimulus*
F. *E.g. Player position/ ball / equiv*

83. Explain how a coach could improve a player's selective attention. [4 marks]

Four marks for 4 of:

A. *Changing the intensity of the stimulus / examples*
B. *Motivate and arouse the performer / performer is alert*
C. *Transfer from previous experience to help with explanation / expectation*
D. *Direct attention to one aspect of the performance / highlight cues*
E. *Learn to ignore irrelevant stimulus / training with distraction / audience*
F. *Lots of relevant practise / rehearsal / mental rehearsal (to the stimulus)*

84. Explain the role of perception within information processing. [3 marks]

Three marks for 3 of:

A. *Interpretation of information*
B. *Selective attention occurs*
C. *Part of DCR (Detection-Comparison-Recognition)*
D. *(Detection) – the identification of a stimulus*

E. *(Comparison) – the stimulus is compared to one stored in memory store*
F. *(Recognition) – the stimulus is matched to one in the memory stores*

Efficiency of information processing

85. For effective performance, games players require the ability to receive, interpret and use information. Explain how information processing differs between a novice performer and an experienced player in possession of a ball, when confronted by a defender. [4 marks]

Four marks for 4 of:
A. *Novice – may select irrelevant information, or Experienced – select relevant information*
B. *Novice – aware of crowd or other named e.g.s, or Experienced – ignores crowd/focuses on team mates*
C. *Novice – decision making is poor/inappropriate/slower, or experienced – quicker/appropriate*
D. *Novice – unable to decide whether to pass, shoot or dribble, or Experienced – will choose pass to the right player etc*
E. *Novice - limited experience/motor programmes, or Experienced – more previous experience/wider variety of motor programmes*
F. *Novice – passes to closest player or runs into defender, or Experienced – variety of different responses for different solutions*

Output

86. In a cricket match, the bowler is preparing to bowl and the batsman is ready to hit the ball. Identify the 3 basic stages of information processing involved in the batsman successfully hitting the ball. [3 marks]

(3 marks max – 1 mark for identifying stage and one of above uses)
The input stage – perception mechanism
A. *Using detect sensory information (eyes);*
B. *Visual information in the form of the position of ball;*
C. *Compare available information at time to knowledge stored in memory/equiv.*

The central / decision-making stage – translatory mechanism
D. *Examine incoming information and select correct response/equiv.*
(1 mark for identifying stage and one of above use)
The output stage – effector mechanism
E. *Movement occurs- instructions sent to muscles to hit ball/equiv.*
(1 mark for identifying stage and one of above use)

Feedback

87. Games players will experience different types of feedback during and after a performance. Explain the different types of feedback that a performer may experience. [4 marks]

Four marks for 4 of:
A. *Positive - used as reinforcement, encouraging the performer to repeat action*
B. *Negative - used if technique incorrect - discourages repetition of action*
C. *Intrinsic - received from within performer via proprioceptors / kinaesthetic*
D. *Extrinsic - received from outside the performer / coach*

E. *Knowledge of Performance - information that performer receives about quality of technique or performance*
F. *Knowledge of Results - information about the outcome of the action*

88. Describe the characteristics of effective feedback for a novice games performer. [3 marks]

Three marks for 3 of:
A. *Performer can only process a small amount of information limited / succinct / short*
B. *Information that is clear / accurate / correct*
C. *Focussed on relevant / specific points / simple*
D. *As soon as possible after the event / immediate / terminal*
E. *Individual rather than to the group*
F. *Mainly extrinsic feedback normally from a coach /more KR*

89. Intrinsic feedback and knowledge of results are two types of feedback. Explain both of these types of feedback. [2 marks]

2 marks for 2 of:
A. *Intrinsic feedback- from within the performer from the proprioceptors/the*
B. *sense of kinesthesis*
C. *Knowledge of performance- knowledge about the reasons for success or failure/information regarding the movement pattern*

Identify the main benefits of feedback to a performer. [3 marks]

3 marks for 3 of:
A. *The correction of errors / improve techniques / highlight weaknesses / developing motor programmes / equiv*
B. *Reinforcement / illustrate success / highlight strengths / equiv*
C. *Motivation / self-confidence / encouragement / equiv*

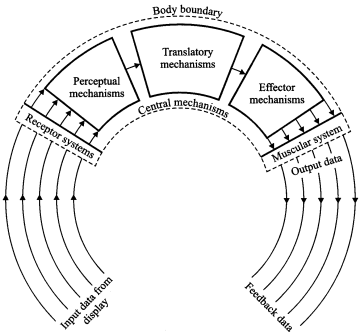
Identify the factors a coach should consider to ensure that feedback is effective. [4 marks]

4 marks for 4 of:
A. *Phase of learning / skill level of the performer - positive feedback better for beginners / negative feedback better for advanced*
B. *Type of skill e.g. complexity / organisation / classification*
C. *Relevance of feedback / meaningful / useful / clear / accurate / focused / specific / appropriate to performer*
D. *Timing of feedback - provide feedback immediately / as soon as possible / terminal*
E. *Quantity of feedback / succinct / short /information overload*
F. *Encourage performer to recognise intrinsic feedback / kinesthesis / learn to feel different movements*
G. *Record the feedback for subsequent reflection*
H. *Must be to the individual rather than to the group*

Efficiency of information processing

Application of Whiting's information processing model to a range of sporting contexts.

90. The diagram shows Whiting's information processing model, with five arrows entering the perceptual mechanism and only one leaving



Identify the process involved and explain why is it necessary [4 marks]

Four marks for:

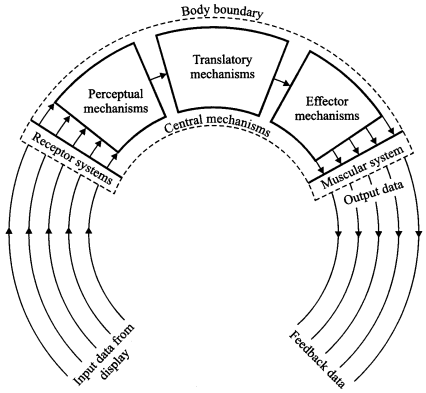
A. *Selective attention*
B. *Filtering of unnecessary information*
C. *Focussing on relevant information*
D. *Too much information for limited capacity*

Identify three factors that help a performer with this process. [3 marks]

Three marks for 3 of:

A. *Expectation / experience - you see what you are waiting to see*
B. *Relevance / quality of instruction - see what you expect to see*
C. *Vividness / intensity – attracts our attention*
D. *Unusual / contrasting – attracts our attention*
E. *Arousal / alertness – more alert able to better identify cues*

91. The diagram shows Whiting's information processing model.



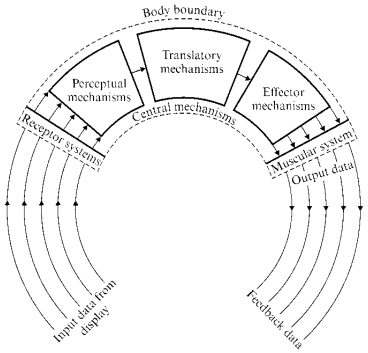
Other information processing models may use different terms to describe the different stages involved. Identify the stage in Whiting's model that is referred to as:

- Response selection stage;
- Stimulus identification stage;
- Response programming stage; [3 marks]

Three marks for:

A. *Response selection – translatory mechanisms*
B. *Stimulus identification - perceptual mechanisms*
C. *Response programming – effector mechanisms*

92. The diagram shows Whiting's Information Processing model.



Explain the functions of each of the following stages:

- Perceptual mechanism
- Translatory mechanism [5 marks]

Five marks for 5 of:
<u>Perceptual Mechanism</u>

A. *Information/stimulus is received from display by receptor systems*
B. *Discriminates information/selective attention/filters out of information*
C. *Coding of important information / interpretation of data / identify stimulus / making sense of information / equiv*
D. *Pass information into translatory*

<u>Translatory Mechanism</u>

E. *Developed / adapts to information*
F. *Compares information with memory / past experiences*
G. *Decision making process*
H. *Selects the appropriate motor programme*

<u>Applied understanding of information processing terms within a sporting context - Strategies to improve information processing</u>

93. In a 'two on one situation', games players are often faced with a situation where they are trying to defend against two attackers, one of whom has the ball.
Describe the information processing involved as the defender decides what to do in this situation. [5 marks]

Five marks for 5 of:

A. *Perceiving / detection - speed / direction / movement of ball / attackers / defenders*
B. *Selective attention - isolate relevant stimuli / cues*
C. *Comparison / recognition / identification of stimuli*
D. *Placing in context – proximity of players, position on pitch, nearness to goal, perceived skill of players*
E. *Anticipating / predicting – likely moves of attackers / team mates*
F. *Use of feedback / kinaesthesis to inform about movements*
G. *Deciding on appropriate response / action / movement according to information from display and tactical knowledge*
H. *Retrieval of information/motor programme from LTM.*

Suggest why a 'two on one situation' inevitably gives an advantage to the attackers. [2 marks]

Two marks for 2 of:

A. *Attackers select move / action that defender must respond to*
B. *Increases uncertainty / stimuli / defender slowed by increasing choices / decisions*

C. *Opportunity to use psychological refractory period to fake move*

Explain why if all the players involved are beginners, then the attack often breaks down. [4 marks]

Four marks for 4 of:

A. *Beginners at cognitive / early associative stage*
B. *Unable to repeatedly complete skill successfully*
C. *Insufficient processing capacity to perform skill and survey positions of players / information overload*
D. *Lack variety of responses to deal with situation*
E. *Demand for speed of decision-making means loss of concentration and skill breaks down / unable to decide response.*

94. Explain, in terms of information processing, why a beginner may experience difficulties when learning a new skill. [3 marks]

Three marks for 3 of:

A. *Deciding what to focus on / selective attention not fully developed*
B. *The ability to process information not developed*
C. *Information overload;*
D. *Motor program not developed /gross errors made.*

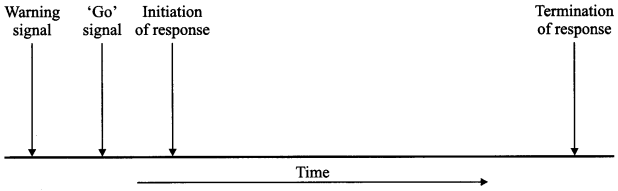
95. A simple information processing system consists of perceptual, translatory and effector mechanisms. Explain what you understand by these terms, using appropriate examples from volleyball. [6 marks]

Six marks for 6 of:

A. *Perception – make sense of incoming information/ use of selective attention*
B. *e.g. the ball has left the opposition server's hand / equiv*
C. *Translation – To <u>decide</u> what is happening and what to do about it / recognise the*
D. *input and make a <u>decision</u> on the action to be taken / decision-making*
E. *E.g. the ball is at chest height I will use a set/volley/equiv*
F. *Effector control – Put a motor programme into effect/doing the movement*
G. *Send impulses to the muscular system in order for the movement to be carried out*
H. *E.g. hands high/viewfinder/extend the legs.*

<u>Definitions of and the relationship between reaction time, response time, movement time</u>

96. The diagram show various stages that occur prior to, during and at the end of a sprint.



Redraw figure 6 and clearly label your drawing to identify reaction time, movement time and response time. [3 marks]

Three marks for:

A. *Reaction time – from go to initiation of response*
B. *Movement time from initiation to termination of response*
C. *Reaction time – from go to termination of response /= reaction time + movement time*

97. Identify an appropriate example from a team game of simple reaction time and choice reaction time. [2 marks]

A. Simple reaction time- movement to whistle / equiv.
B. Choice reaction time- movements of own players on court and who to pass to / equiv.

98. Male professional tennis players serve very fast. It takes 0.17 seconds for the ball to reach the receiver once it has left the server's racket. The time taken by the receiver to decide on an action is approximately 0.15 seconds, and the time taken for the receiver to play the return having decided on a stroke is 0.2 seconds. Using the information provided, calculate:
    - reaction time;
    - response time, and;
    - movement time. [3 marks]

A. Reaction time - 0.15 (secs);
B. Response time - 0.35 (secs);
C. Movement time - 0.2 (secs). 3 marks

99. Suggest reasons why novice performers often find it difficult to return a serve even when it is delivered at a speed that is within their capabilities to respond to. [3 marks]

Three marks for 3 of:
A. Novices lack experience/knowledge of situation;
B. Unable to detect cues/signals until too late;
C. Lack range of responses/strokes to deal with serve;
D. Unable to perform actions required/lacks skills;
E. Choose inappropriate response.

100. In cricket, a batsman is waiting to receive the ball. As the bowler bowls, the batsman begins to move. With reference to the batsman, define the terms movement time, response time and reaction time. [3 marks]

Three marks for:
A. Movement Time – The time taken from the initiation / completion of the movement from start to finish to perform the response - E.g. executing / performing the shot
B. Response Time – The total time to complete a response to a given stimulus/Reaction time + Movement time. E.g. seeing the ball to the end of the shot
C. Reaction Time-The time taken to recognise and begin to react to the stimulus / time taken between the first presentation of the stimulus to the start of the movement / time taken to decide the shot. E.g. the cue of the bowlers run up to the playing of the shot.

101. Suggest four factors that could affect the batsman's response time. [4 marks]

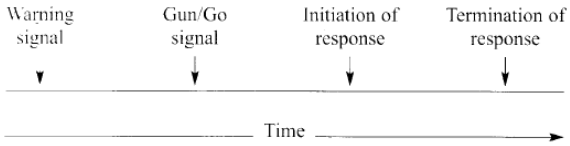
Four marks for 4 of:
A. Type of stimuli- sight / sound
B. (Previous) experience / anticipation of the movement (accept reverse)
C. Gender – Males have shorter response times than females
D. Age – response time decrease with age
E. Intensity of the stimulus – ball colour / speed of delivery
F. Concentration levels / distractions / selective attention / stimulus overload

G. *Playing environment – wicket surface / weather*
H. *Physical fitness / injury*
I. *Duration of the movement / reaction time*
J. *Arousal / drugs / state of mind / anxiety*
K. *PRP / deception of delivery from bowler.*

102. Explain, in terms of reacting quickly, the principles of Hick's Law. [2 marks]

Sub max 1 mark:
A. *<u>Choice reaction time</u>*
Sub max 1 mark
B. *More choices / stimuli - longer reaction time*
C. *Linear relationship / directly proportional (nb accept annotated graph)*

103. The diagram shows the various stages that occur before, during and at the end of a swimming start.



Explain the terms movement time and response time, giving examples of each in relation to a swimming start. [4 marks]

Four marks for 4 of:
A. *Movement time – the time taken from the initiation/completion of the movement from start to finish to perform the action*
B. *Executing dive from blocks to entry into water*
C. *Response time = the total time to complete a response to a given stimulus / reaction time + movement time / time taken from the onset of the stimulus to the completion of the movement*
D. *Hearing the command / go to taking the first stroke / equiv*

Justify the swimming racing start as an example of simple reaction time or choice reaction time. [2 marks]

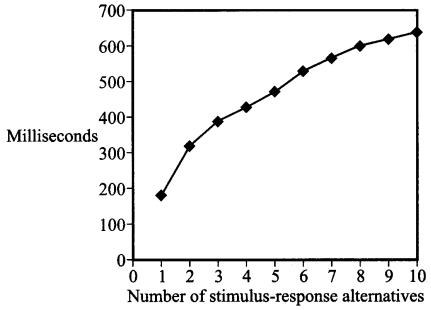
A. *Simple reaction time.*
B. *Specific reaction to a specific stimulus / one stimulus = one reaction*

104. Explain, using the single channel hypothesis how reaction time can be affected by the presence of more than one stimulus. [3 marks]

3 marks for 3 of:
A. *Stimulus can only be processed one at a time*
B. *Before first response can be completed*
C. *The second stimulus has occurred / arrived*
D. *Must deal with first stimulus and finish with It and begin to process second stimulus*
E. *But there is a delay / psychological refractory period*
F. *Causes slower reaction time / slower to respond*
G. *Hick's Law which is increased reaction time due to more choice*
H. *Training will lead to both long term and short term changes to the body systems.*

<u>Factors affecting response time</u>

105. The graph illustrates *Hick's Law*.



Use Hick's Law and the *psychological refractory period* to explain how an attacker in a team game may gain an advantage over a defender. [5 marks]

Five marks for 5 of:

A. *Hick's law – choice reaction time linearly related to number of choices*
B. *Double choice and double reaction time / more choices takes longer*
C. *PRP – longer to respond to a second stimulus / delay in processing second stimulus until response to first stimulus has been completed*
D. *Used in games for 'faking / dummying' opponent*
E. *Opponent responds to first signal of performer before they can respond to second signal*
F. *Meanwhile performer moves off*
G. *Single channel hypothesis*
H. *Can only deal with one item of information at a time*
I. *Explains PRP – must respond to first signal before we can deal with second signal*

106. Explain, using an example from a team game, why the psychological refractory period often occurs in team games. [3 marks]

Three marks for 3 of:
Sub max 1 mark

A. *The use of a deception / fake / dummy / in a named team game situation / equiv (sub max 2 marks)*
B. *Only process one item of information at a time / equiv*
C. *Response to later information likely to be delayed / equiv*
D. *Due to responding to first stimulus.*

107. When playing in a racket game, the ball/shuttlecock occasionally hits the net during a rally and the receiver has to adjust their response. Explain why this causes a delay before the final response can be made. [4 marks]

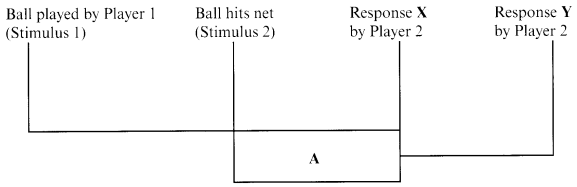
Four marks for 4 of:
(sub max 1 mark)

A. *Psychological refractory period.*

Three marks for 3 of:

B. *Caused by the increased processing time needed for the second signal*
C. *Due to the single channel (bottle neck)*
D. *One signal must be cleared before another can be responded to*
E. *Can only deal with one piece of information at one time*
F. *So the response to the second response takes longer.*

108. During rallies, tennis players have to react and respond quickly as a result of the actions of their opponents. The diagram shows part of the processing that occurs as a result of an opponent's shot.



Identify, using the diagram, the period represented by area A and give an example of response X and response Y. [3 marks]

Three marks for:

A. *Area A – Psychological refractory period (do not credit PRP)*
B. *Response X – Player prepares for shot / forehand / volley / backhand*
C. *Response Y – Player has to run to net / adapt to the changed flight of the ball.*

Explain, using the single channel hypothesis, why area A is created and why this may be a disadvantage for player 2. [4 marks]

Four marks for 4 of:

A. *Stimulus can only be processed one at a time*
B. *But before first response can be completed*
C. *The second stimulus has occurred/arrived*
D. *They must deal with stimulus 1 and finish with it and begin to process stimulus 2*
E. *The player must respond to this second stimulus*
F. *But there is a delay (Psychological refractory period)/longer time/slower reaction time*
G. *Because player stops to sort out information (ball hitting net)*
H. *Player reacts too late/rushed shot/unforced error/e.g's/cannot return/opponent wins/player loses point.*

<u>Definitions of anticipation</u>

109. Performers use anticipation to improve response time. Explain the term anticipation. [2 marks]

Two marks for 2 of:

A. *Attempting to predict that a movement will happen*
B. *<u>Spatial</u> - predicting <u>what/where</u> a movement will happen – e.g. type of pass*
C. *<u>Temporal</u> - predicting <u>when</u> something will happen – e.g. speed of ball*

<u>Strategies to improve response time.</u>

110. Explain what strategies the performer could use to return the ball successfully in situations such as that described above. [4 marks]

Four marks for 4 of:

A. *Based on experience/knowledge/LTM/practice;*
B. *Early detection of cues/signals/intentions;*
C. *Select appropriate motor programme from memory;*
D. *Anticipate/move before ball hit/guess;*
E. *Watch ball toss/equiv;*
F. *Watch stance/body movements/foot placement/ equiv;*
G. *Watch racket swing/action/equiv; any 3 for 3 marks*

111. Suggest strategies that a batsman could use to achieve a faster response time. [3 marks]

Three marks for 3 of:

A. *Mental rehearsal*
B. *Selective attention / watching the action*
C. *Practice reacting to specific stimuli / grooving the response / strengthen the S-R bond*
D. *Improve physical fitness*
E. *Anticipation of stimulus / early identification cues*
F. *Concentration on preliminary movements before the actual movement itself*

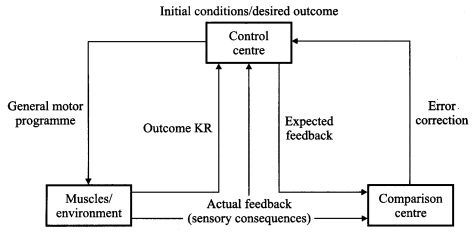
112. Suggest how a swimmer could improve their response time. [3 marks]

Three marks for 3 of:

A. *Concentration / pay attention / selective attention / focus on cues*
B. *Practice reacting to the gun / command / improve reaction time*
C. *Improve physical fitness / improve movement time*
D. *Be at optimum arousal level / increased arousal / increased alertness*
E. *Anticipation / prediction of the gun / command*
F. *Mental rehearsal*

<u>Application of schema theory in sporting situations.</u>

113. The diagram outlines Schmidt's schema theory of motor control.



Identify, using the diagram, the four items of information that Schmidt suggests are stored every time a movement is produced. [4 marks]

4 marks for:

A. *Initial conditions / desired outcome*
B. *Expected feedback*
C. *Outcome KR*
D. *Actual feedback (sensory consequences)*

Describe how these four pieces of information are used to initiate and adapt a movement such as passing a ball in a team game. [4 marks]

Four marks for 4 of:

A. *Recall schema uses*
B. *initial conditions, expected feedback and outcome KR*
C. *for movement production*
D. *Recognition schema uses*
E. *Initial conditions, outcome KR and actual feedback (sensory consequences)*
F. *For movement evaluation*

114. Explain how might a coach use their knowledge of schema theory to develop practices. [3 marks]

Three marks for:

A. *Vary practice sessions to provide range of relationships*
B. *Use terminal/positive/continuous feedback to strengthen schema*
C. *Realistic situations/within game*

115. Coaches will try to ensure that their practice conditions are as varied as possible, since variability of practice is supported by Schmidt's Schema Theory. Describe the main principles of Schmidt's Schema Theory. [6 marks]

Six marks for 6 of:
A. *Schema are a store of generalised/fundamental motor programmes*
B. *set of 'rules' to help us make decisions/relationships*
C. *recall schema*
D. *recognition schema*
E. *initial conditions*
F. *e.g. information about limb positions/environmental conditions*
G. *response specifications/movement requirements/outcome*
H. *e.g. demands of movement – height/speed/etc*
I. *sensory consequences*
J. *e.g. feedback information concerning performance/KP/KR*
K. *response outcome*
L. *comparison of actual and intended outcome/feedback*
M. *variability of practice helps develop schema by experiencing different situations*
N. *this gives better chance of making a correct response in novel/new situations*

116. Explain the implications of Schmidt's schema theory for the way that sports skills should be taught. [2 marks]

Three marks for 3 of:
A. *Vary conditions by changing initial conditions / appropriate example*
B. *build up set of experiences*
C. *response specifications / movement requirements / outcomes*
D. *e.g. weight of implement / flight of ball*
E. *use of discovery style / not command style*
F. *teach fundamental skills before sport specific*

117. Schmidt's schema theory is based on four sources of information which are used to modify motor programmes. List the four sources of information. [4 marks]

(Knowledge of) initial conditions / environmental conditions
(Knowledge of) response specifications / response demands
Sensory consequences / Kinethesis / Knowledge of Performance
Movement outcomes / Knowledge of Results

118. Suggest how can a coach organise practices to enable a schema to develop. [3 marks]

Three marks for 3 of:
A. *Practice to be varied / avoid massed practice / examples*
B. *Should include plenty of information*
C. *Should have feedback*
D. *Should be realistic to the game / activity*
E. *Should include transferable elements*
F. *Becoming more challenging / more difficult*

119. Explain how a coach could enable schema to develop. [5 marks]

Five marks for 5 of:

A. *Varied practice conditions / equiv*
B. *Plenty of information*
C. *Practice relevant to game / conditioned games*
D. *Frequent feedback (continuous and terminal)*
E. *Tasks should be challenging*
F. *Include transferable information from other sports*
G. *Slow motion practice / video analysis / visual aids / guidance*
H. *Ensure players are aware of transfer possibilities*