



BRAINWARE UNIVERSITY
Term End Examination 2020 - 21
Programme – Diploma in Civil Engineering
Course Name – Building Material and Construction
Course Code - DCE302

Semester / Year - Semester III

Time allotted : 75 Minutes

Full Marks : 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 60=60

1. (Answer any Sixty)

(i) Gypsum is a

- | | |
|---|---------------------|
| a) mechanically formed sedimentary rock | b) igneous rock |
| c) chemically precipitated sedimentary rock | d) metamorphic rock |

(ii) Which of the following sedimentary rocks changes into quartzite by metamorphic action?

- | | |
|--------------|--------------|
| a) sandstone | b) limestone |
| c) shale | d) gypsum |

(iii) Which of the following represents a metamorphic rock? i) slate ii) shale iii) quartzite

- | | |
|------------------------|----------------------------|
| a) only (iii) | b) both (i) and (iii) |
| c) both (ii) and (iii) | d) all (i), (ii) and (iii) |

(iv) Slate is formed by metamorphic action on

- | | |
|--------------|--------------|
| a) shale | b) limestone |
| c) sandstone | d) granite |

(v) Which of the following is a rock?

- | | |
|-----------|---------|
| a) quartz | b) mica |
|-----------|---------|

c) gypsum

d) None of These

(vi) Which of the following metamorphic rocks has the most weather resisting characteristics?

a) marble

b) quartzite

c) slate

d) lime stone

(vii) A good building stone should not absorb water more than

a) 0.05

b) 0.1

c) 0.15

d) 0.2

(viii) Which of the following has more fire resisting characteristics?

a) marble

b) lime stone

c) compact sand stone

d) granite

(ix) The predominant constituent which is responsible for strength in granite is

a) quartz

b) feldspar

c) mica

d) None of These

(x) Granite is not suitable for ordinary building purpose because

a) it can not be polished

b) it is not a fire proof material

c) it is costly

d) it has less crushing strength

(xi) The preparation of surface of stone to obtain plain edges or to obtain stones of required size and shape is known as

a) quarrying of stones

b) blasting of stones

c) seasoning of stones

d) dressing of stones

(xii) Specific gravity for most of the building stones lies between

a) 1.5 to 2.0

b) 2.0 to 2.5

c) 2.5 to 3.0

d) 3.0 to 3.5

(xiii) Cross cut saw is used for

- a) cutting soft stones
- b) cutting hard stones
- c) cutting large blocks of stones
- d) dressing stones

(xiv) Which of the following trees yields hard wood?

- a) deodar
- b) chir
- c) shishum
- d) pine

(xv) The radial splits which are wider on the outside of the log and narrower towards the pith are known as

- a) heart shakes
- b) cupshakes
- c) starshakes
- d) rindgalls

(xvi) In which of the following pairs both trees yield softwood?

- a) deodar and shishum
- b) chir and sal
- c) sal and teak
- d) chir and deodar

(xvii) Assertion A : Shishum is used for decorative woodwork. Reason R : Shishum can be polished to an excellent finish. Select your answer according to the coding system given below:

- a) Both A and R are true and R is the correct explanation of A
- b) Both A and R are true but R is not the correct explanation of A
- c) A is true but R is false
- d) A is false but R is true

(xviii) Plywood has the advantage of

- a) greater tensile strength in longer direction
- b) greater tensile strength in shorter direction
- c) same tensile strength in all directions
- d) None of These

(xix) The moisture content in a well seasoned timber is

- a) 4% to 6%
- b) 10% to 12%

c) 15% to 20%

d) 1

(xx) The age of a tree can be known by examining

a) cambium layer

b) annular rings

c) medullary rays

d) heart wood

(xxi) The practical limit of moisture content achieved in air drying of timber is

a) 0.05

b) 0.15

c) 0.25

d) 0.35

(xxii) A first class brick when immersed in cold water for 24 hours should not absorb water more than

a) 0.15

b) 0.2

c) 0.22

d) 0.25

(xxiii) The nominal size of the modular brick is

a) 190 mm x 90 mm x 80 mm

b) 190 mm x 190 mm x 90 mm

c) 200 mm x 100 mm x 100 mm

d) 200 mm x 200 mm x 100 mm

(xxiv) Excess of silica in brick earth results in

a) cracking and warping of bricks

b) loss of cohesion

c) enhancing the impermeability of bricks

d) None of These

(xxv) Which of the following pairs gives a correct combination of the useful and harmful constituents respectively of a good brick earth ?

a) lime stone and alumina

b) silica and alkalies

c) alumina and iron

d) alkalies and magnesium

(xxvi) Advantage of a clamp compared to a kiln for burning bricks is that

a) it takes less time for burning

b) it gives more output of first class bricks

c) it has less initial cost

d) it is suitable when bricks are required in large numbers

(xxvii) Pug mill is used for

a) preparation of clay

b) moulding of clay

c) drying of bricks

d) burning of bricks

(xxviii) The frog of the brick in a brick masonry is generally kept on

a) bottom face

b) top face

c) shorter side

d) longer side

(xxix) Glazing is used to make earthenware

a) hard

b) soft

c) porous

d) impervious

(xxx) Hydraulic lime is obtained by

a) burning of lime stone

b) burning of kankar

c) adding water to quick lime

d) calcination of pure clay

(xxxii) As per IS specifications, the maximum final setting time for ordinary Portland cement should be

a) 30 minutes

b) 1 hour

c) 6 hours

d) 10 hours

(xxxiii) After storage, the strength of cement

a) decreases

b) increases

c) remains same

d) may increase or decrease

(xxxiv) Addition of pozzolana to ordinary Portland cement increases

a) bleeding

b) shrinkage

c) permeability

d) heat of hydration

(xxxiv) The slump recommended for mass concrete is about

- a) 25 mm to 50 mm
- b) 50 mm to 100 mm
- c) 100 mm to 125 mm
- d) 125 mm to 150 mm

(xxxv) Which of the following cements is suitable for use in massive concrete structures such as large dams?

- a) ordinary Portland cement
- b) low heat cement
- c) rapid hardening cement
- d) sulphate resisting cement

(xxxvi) The most common admixture which is used to accelerate the initial set of concrete is

- a) gypsum
- b) calcium chloride
- c) calcium carbonate
- d) None of These

(xxxvii) The basic purpose of a retarder in concrete is

- a) to increase the initial setting time of cement paste in concrete
- b) to decrease the initial setting time of cement paste in concrete
- c) to render the concrete more watertight
- d) to improve the workability of concrete mix

(xxxviii) The most commonly used retarder in cement is

- a) gypsum
- b) calcium chloride
- c) calcium carbonate
- d) None of These

(xxxix) Compared to mild steel, cast iron has i) high compressive strength ii) high tensile strength iii) low compressive strength iv) low tensile strength The correct answer is

- a) (i) and (ii)
- b) (ii) and (iii)
- c) (iii) and (iv)
- d) (i) and (iv)

(xl) Which of the following gradients exerts maximum influence on properties of steel?

- a) iron
- b) carbon
- c) manganese
- d) sulphur

(xli) Which of the following is the purest form of iron?

- a) cast iron
- b) wrought iron
- c) mild steel
- d) high carbon steel

(xlii) In brick masonry the bond produced by laying alternate headers and stretchers in each course is known as

- a) English bond
- b) double flemish bond
- c) zigzag bond
- d) single flemish bond

(xliii) A queen closer is a

- a) brick laid with its length parallel to the face or direction of wall
- b) brick laid with its breadth parallel to the face or direction of wall
- c) brick having the same length and depth as the other bricks but half the breadth
- d) brick with half the width at one end and full width at the other

(xliv) The most important tool in brick laying for lifting and spreading mortar and for forming joints is

- a) trowel
- b) square
- c) bolster
- d) scutch

(xlv) The type of bond provided in brick masonry for carrying heavy loads is

- a) single flemish bond
- b) double flemish bond
- c) English bond
- d) zigzag bond

(xlvi) As compared to stretcher course, the thickness of joints in header course should be

- a) less
- b) more
- c) equal
- d) equal or more

(xlvii) In case of foundations on black cotton soils, the most suitable method to increase the bearing capacity of soils is to

- a) increase the depth of foundation
- b) drain the soil
- c) compact the soil
- d) replace the poor soil

(xlviii) The minimum depth of foundation in clayey soils is

- a) 0.5m
- b) 0.7m
- c) 0.9m
- d) 1.2m

(xlix) The bearing capacity of a water logged soil can be improved by

- a) compacting the soil
- b) draining the soil
- c) increasing the depth of foundation
- d) grouting

(l) The vertical distance between the springing line and highest point of the inner curve of an arch is known as

- a) intrados
- b) rise
- c) spandril
- d) extrados

(li) The triangular space formed between the extrados and the horizontal line drawn through the crown of an arch is known as

- a) haunch
- b) spandril
- c) voussoirs
- d) skewbacks

(lii) In the construction of arches, sand box method is used for

- a) centring
- b) actual laying of arch work
- c) striking of centring
- d) None of These

(liii) The type of joint commonly used at the junction of a principal rafter and tie beam in timber trusses is

- a) mortise and tenon joint
- b) oblique mortise and tenon joint
- c) butt joint
- d) mitred joint

(liv) Pitched and sloping roofs are suitable for

- a) coastal regions
- b) plain regions
- c) covering large areas
- d) All of these

(lv) Mansard roof is a roof which slopes in

- a) two directions without break in the slope on each side
- b) two directions with break in the slope on each side
- c) four directions without break in the slope on each side
- d) four directions with break in the slope on each side

(lvi) The lower edge of the pitched roof, from where the rain water of the roof surface drops down, is known as

- a) hip
- b) gable
- c) ridge
- d) eaves

(lvii) The function of king post in a king post roof truss is

- a) to support the frame work of the roof
- b) to receive the ends of principal rafter
- c) to prevent the walls from spreading outward
- d) to prevent the tie beam from sagging at its centre

(lviii) Sum of tread and rise must lie between

- a) 300 to 350mm
- b) 400 to 450mm
- c) 500 to 550 mm
- d) 600 to 650 mm

(lix) Minimum width of landing should be

- a) equal to width of stairs
- b) half the width of stairs
- c) twice the width of stairs
- d) one fourth the width of stairs

(lx) In any good staircase, the maximum and minimum pitch respectively should be

- a) 90° and 0°
- b) 75° and 30°

c) 60° and 10°

d) 40° and 25°