3.4 BUILDING CONSTRUCTION (446)

The Building Construction for the year 2022 consisted of two papers namely Paper 1 (Theory) and Paper 2 (Practical Project). The theory paper constituted 60% while the Practical Project constituted 40% of the final mark. The format and weighting of the papers was the same as in the previous years.

3.4.1 Candidates general performance

The table below shows candidates' overall performance for the five-year period, from 2018 o 2022.

Table 13: Candidates overall performance in the years 2018, 2019, 2020, 2021 and 2022

Year	Paper	Candidature	Maximum scores	Mean Score	Standard deviation
2018	1 2 Overall	291	60 40 100	41.49 27.7 69.19	8.37 4.55 12.27
2019	1 2 Overall	430	60 40 100	39.99 26.61 66.51	9.50 4.10 12.80
2020	1 2 Overall	610	60 40 100	41.81 27.91 69.72	8.74 4.29 12.25
2021	1 2 Overall	756	60 40 100	37.09 24.67 61.60	9.94 4.92 14.18
2022	1 2 Overall	1074	60 40 100	39.30 23.76 58.18	7.15 8.25 21.37

From the table above, the following observations can be made:

(i) The candidature increased from 756 in the year 2021 to 1074 in 2022. It is important to note that the candidature has been increasing steadily since 2018.

(ii) However, the mean score dropped from 61.60 in 2021 to 58.18 in 2022 while the standard deviation increased from 14.18 to 21.37.

3.4.2 Building Construction Paper 1 (446/1)

The questions which were reported to have been poorly responded to have been analyzed with a view to pointing out candidates' weaknesses and propose suggestions on some remedial measures that need to be taken in order to improve performance in future. The questions for discussions include 7, 11, 12 and 14

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Question 7

State three regulations governing the erection of standards in scaffolding work

Weakness

Most candidates gave responses for characteristics of scaffold instead of the regulations which govern their erection.

Advice to teachers

Teachers are advised to explain to the students clearly how scaffolds are erected on site and the reg - lations which govern the erection. They should take students to construction sites within their locality for them to see and understand the need to use scaffolds du ing construction.

Expected responses

Regulations governing the erection of standards in scaffolding work

- Standards of a scaffold must either be vertical or lean slight y towards the building for stability
- For steel scaffolds, the standards, couplers and any joining ma erial should free from corrosion or any other defects.
- Standards must stand on a firm base off the ground and sit on t base plate to prevent slipping or sinking
- The distance between standards must be kept parallel from the top to the bottom
- Maintain equal distance from the wall in all cases.

Question 11

Figure 2 shows three views of a hollow wooden block drawn in third angle projection. Draw the block **Full Size** in isometric projection.

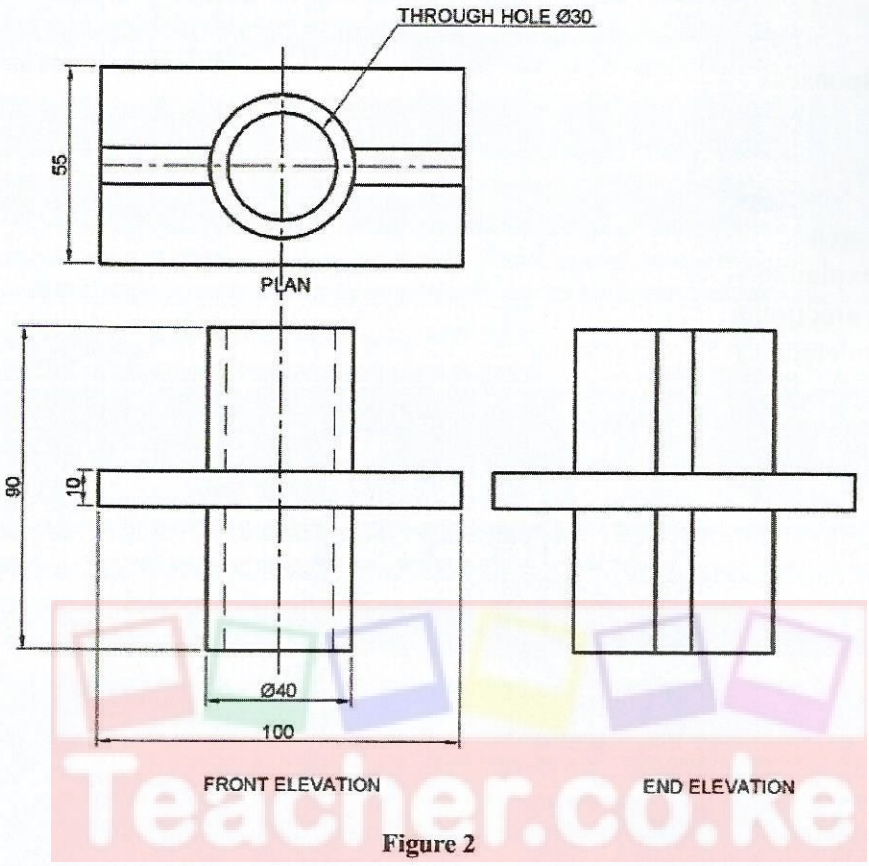


Figure 2

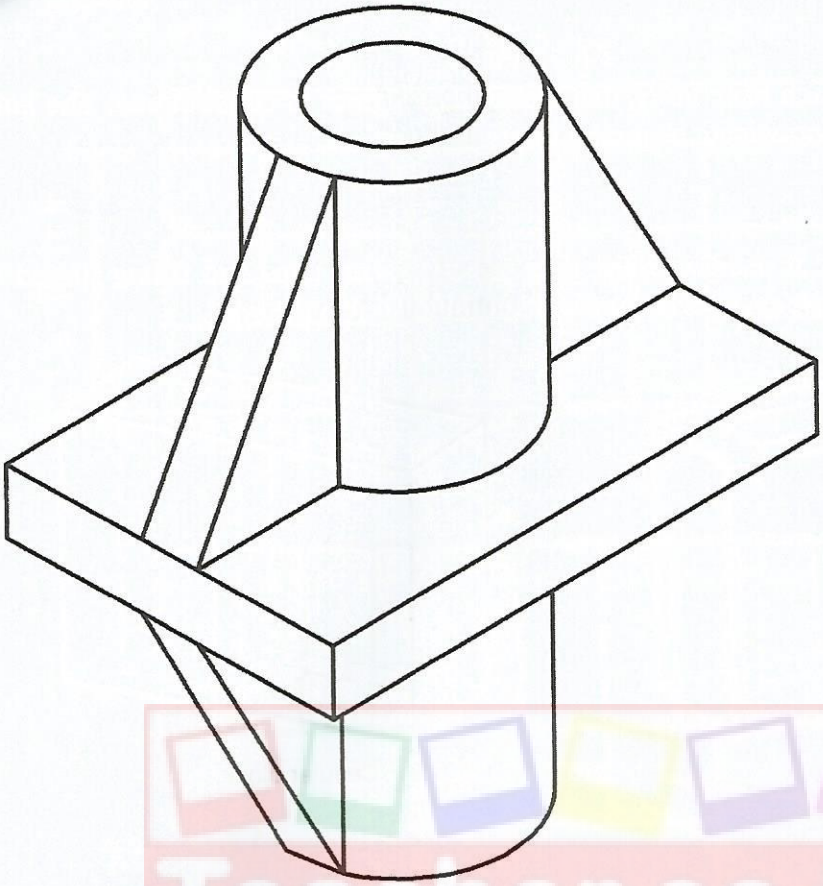
Weakness

Some candidates could not construct the isometric circles on the isometric drawing.

Advice to teachers

Teachers are advised to cover the syllabus adequately and explain to the students how to construct isometric circles in isometric drawings.

Expected response



Question 12 (b)

Using sketches, explain the difference between hollow blocks nd cellular blocks

Weakness

Most candidates could not sketch and explain the difference bet een hollow and cellular blocks used in construction.

Advice to teachers

Teachers are advised to cover the syllabus adequately including the topic of classification of blocks used in construction.

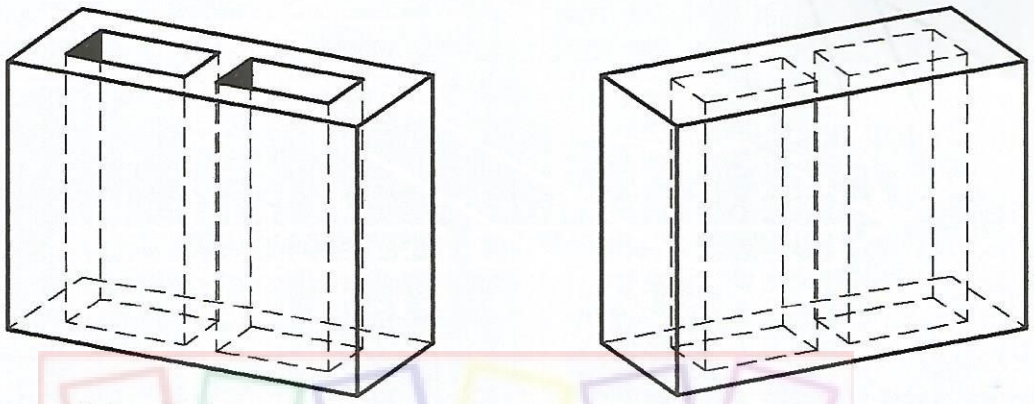
Expected responses

(i) **Hollow blocks**

These types of blocks which have holes that make them lighter in construction. The holes may also be useful when running wiring or piping through them.

(ii) **Cellular blocks**

Are type of blocks which is used with the purpose of sealing gaps and filling ribbed slabs in construction block such that cavities do not run continuously up the wall.



Question 14 (a)

Figure 3 shows a one brick thick wall with an attached pier in English bond. Sketch the plans of two alternate courses to show the bonding details at the pier.

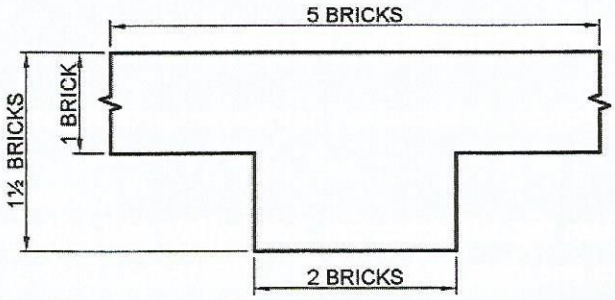


Figure 3

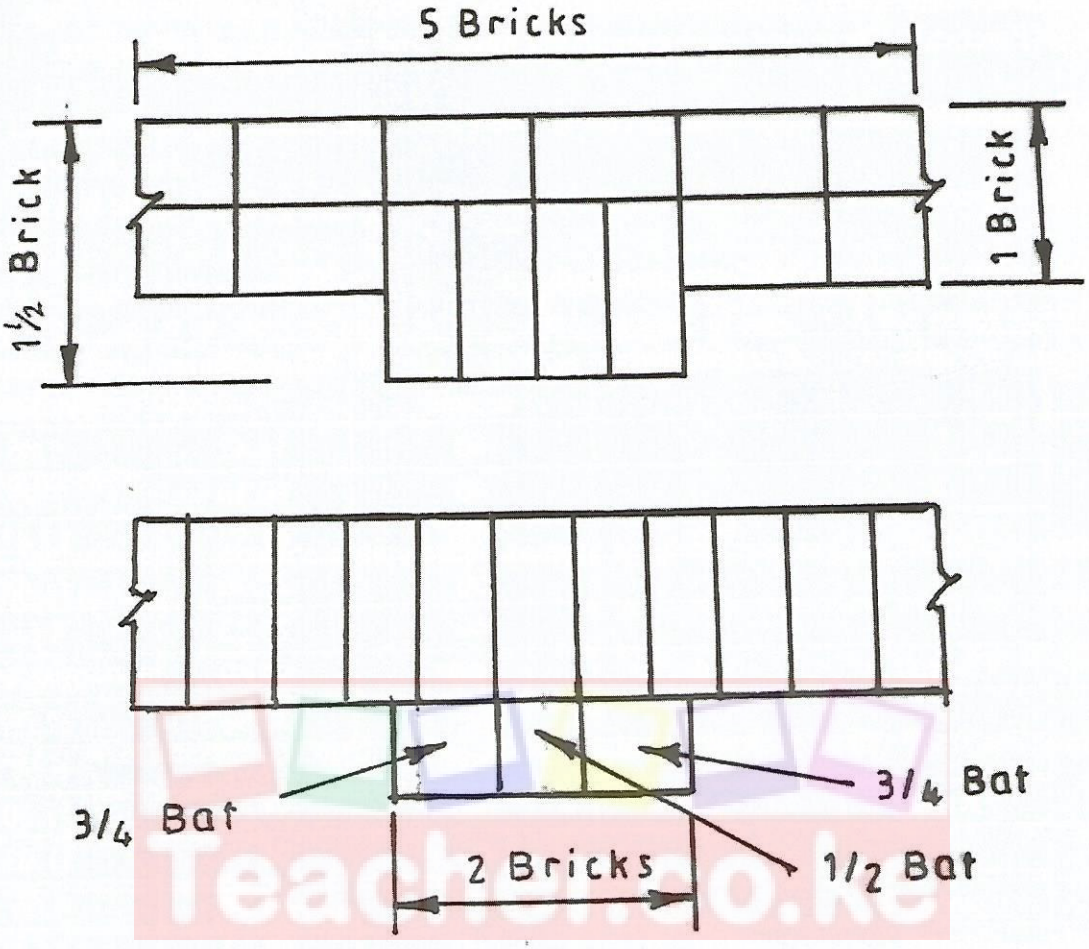
Weakness

Most candidates could not sketch to show the bonding details for the English bond.

Advice to teachers

Teachers are advised to involve the students in a lot of practicals for them to internalize the skills in construction works including how different types of bonds are laid during construction for strength of the building.

Expected response



3.4.3 Building Construction Paper 2 (446/2)

Like in the previous years, the council designed a suitable project for this level together with a comprehensive marking scheme. The subject teacher used the working drawings to supervise the fabrication of the project and the scoring guide to mark the candidate's projects. The marks were then uploaded onto the KNEC within the specified time as per the instructions given after revision due to the Covid 2019 pandemic.